Washington State Department of Transportation

# HOT Lanes Pilot Project Proposal

## What are the potential benefits of HOT lanes?

- Preserve priority status for transit and vanpools
- Improve traffic flow for motorists in all lanes of traffic
- Allow solo drivers to buy-in when there is space available in the HOT lanes
- Move more people and vehicles through a HOT lane corridor

## Will the HOT lanes pay for themselves?

It is estimated that the capital cost to convert the existing HOV lanes could be recovered in 14 to 26 years - depending on the maintenance-operation cost and debt repayment approach. However, since the pilot project is scheduled to last four years, WSDOT will seek additional funds to help pay for the project.

## Recommendation

It is recommended that the WSDOT pursue the design and implementation of the SR 167 HOT Lane Pilot Project.

Implementing the project would take about 20 months from the time it is approved and funded. Some legislative changes will be required to grant the Transportation Commission the authority to implement the pilot project. Following the opening of the HOT lanes, a detailed monitoring and evaluation period would begin to determine the overall success of the pilot.

For more information
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## PILOT PROJECT

## How much will the pilot project cost?

A preliminary estimate of the costs to convert the SR 167 HOV lanes to HOT lanes is approximately $14 million for:

- Construction.
- Pavement markings and signage
- Toll collection equipment
- Maintaining traffic flow during construction

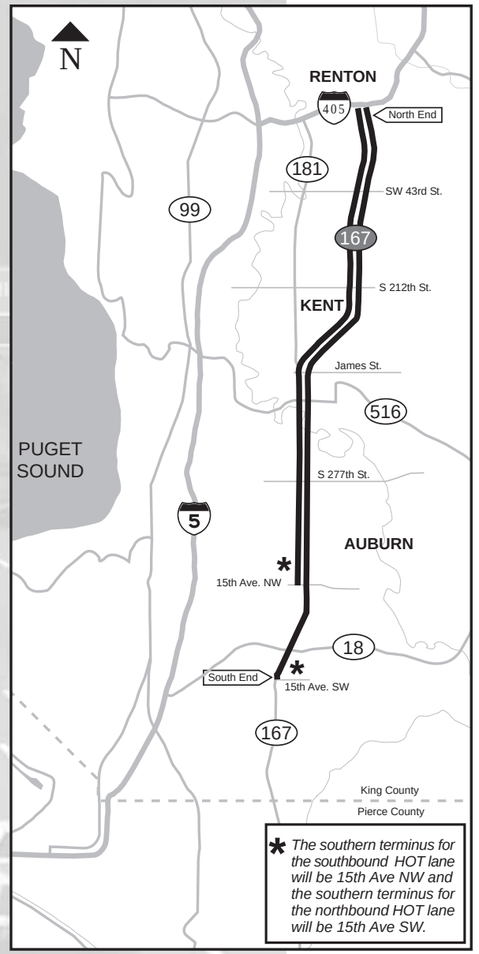
These costs do not include front office/customer service and support costs (shared with Tacoma Narrows Bridge) or costs for toll tags (approximately $15 to $30 per vehicle).

## Pilot Wins $1.18 M Grant

In November 2004, WSDOT won a $1.18 million grant from the Federal Highway Administration for the SR 167 HOT Lane Pilot Project. The grant will be used in 2005 for planning and preliminary engineering activities.

## Next Steps

- Gain legislative approval
- Identify funding
- Complete planning and design
- Inform public

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## SR 167 High Occupancy Toll Lane Pilot Project:

### Moving more people at the same or higher speeds

In January of 2003, as a result of WSDOT's most extensive high occupancy vehicle lane evaluation, the Transportation Commission directed WSDOT to evaluate the feasibility and potential benefit of converting one or more HOV lanes to High Occupancy Toll (HOT) lanes.

The purpose is to preserve long-term transit reliability and improve traffic flow on Puget Sound area freeways. The HOV evaluation found that most of the carpool lanes are full during peak commute times, but have room in them during mid-day hours. Maximizing use of the carpool lanes could improve traffic flow in all lanes during certain hours.

An initial analysis of SR 167 found that if we convert the HOV lanes to HOT lanes we could expect more vehicles to move through the corridor than currently do, without impacting speed or travel time reliability for transit and carpools.

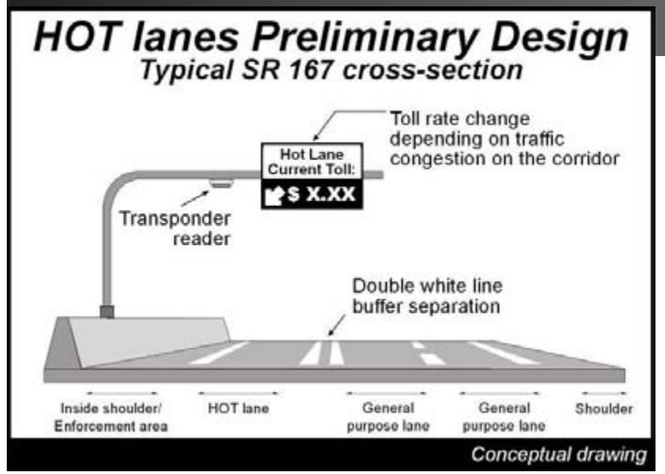
If approved and funded, the SR 167 HOT Lanes Pilot Project would be the first HOT lane in Washington State and would provide more data to help determine if HOT lanes could be used in other locations, what modifications would be needed, and the level of public acceptance.

## What is a HOT lane?

High Occupancy Toll (HOT) lanes are lanes that are open to vanpools, carpools, transit, and toll-paying solo drivers. In addition to preserving priority status for transit, HOT lanes allow solo-drivers to use the surplus capacity in the lanes by paying a toll. Tolls for HOT lanes are set to assure that these lanes keep flowing even when the regular lanes are congested.

HOT lanes can be built for this purpose or converted from high occupancy vehicle (HOV) lanes. The SR 167 HOT lanes would use an electronic toll collection system. No toll booths would be necessary.

HOT lanes have successfully been implemented on State Route 91 (Orange County) and Interstate 15 (San Diego) in California, and on Interstate 10 in Houston, Texas. Minnesota has just announced a plan to implement tolls on Interstate 394 by Spring 2005.




## What will they look like?

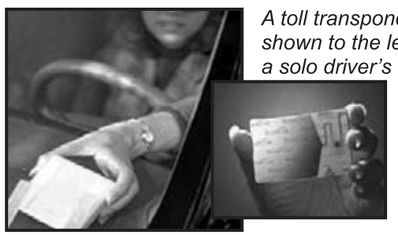
The HOT Lane project would be on the existing HOV lanes on nine miles of SR 167 between Renton and Auburn. Converting the existing HOV lanes to HOT lanes would involve restriping the lanes to create a buffer space between the HOT lane and the adjacent general purpose lane.

## How do we assure safe operations?

- Continuous buffer separation between each HOT lane and the adjacent general purpose lane
- Strategic locations of HOT lane access points to maintain safe operational performance - with minimum 1,000 foot openings
- Law enforcement and incident response teams to ensure the safe use of the HOT lanes

## How will toll collection work?

No toll booths will be required. The SR 167 pilot project will use an electronic toll collection system which will not require a solo driver to slow down to pay the toll. The electronic toll collection system will include vehicle-mounted transponders, over-roadway transponder readers, and electronic toll rate signs. Solo drivers will pay a single entry fee - regardless of where they enter and exit the HOT lane.

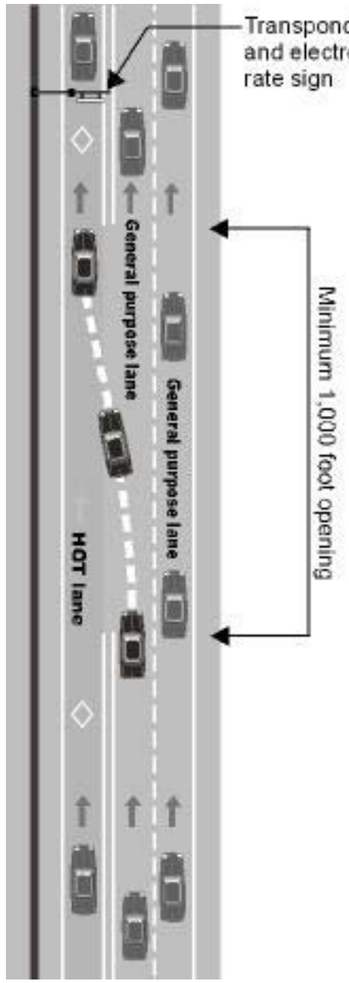


*A toll transponder similar to those shown to the left would be placed on a solo driver's dash board or visor.*

## How will people get in and out of HOT lanes?

Drivers can access the HOT lanes at the beginning of the HOT lanes or at several mid-point access locations. (Shown below).

Each mid-point access location's buffer opening will be a minimum of 1,000 feet long - allowing access both into and out of the HOT lane. A total of 4 access points in the northbound lane and 3 access points in the southbound would be provided.




## What is the guiding philosophy?

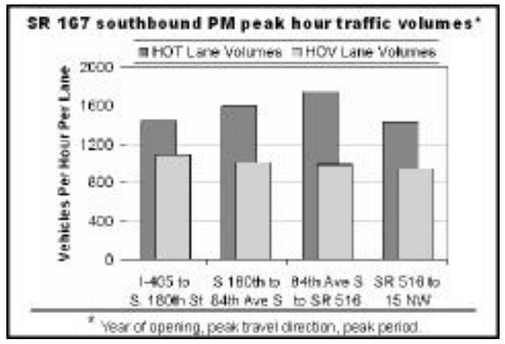
- Maintain transit and HOV speed and reliability
- Move more people at the same or higher speeds

## How much will the toll cost?

- Transit, vanpools and carpools would continue to be able to use the HOT lane for free
- Solo drivers will be allowed to access to the HOT lanes when transit and HOV speeds are 45 mph or higher
- Opening year peak period toll rates are estimated between 60 cents and $1.20 - but could be higher during heavy congestion. Toll rates will change based on the congestion level - the more traffic the higher the toll

## How will HOT lanes improve traffic?

Converting the HOV lanes to HOT lanes is expected to improve traffic flow by moving 13% more vehicles during the peak periods while maintaining travel speeds and reliability for buses, carpools and vanpools in the HOT lanes. The analysis was conducted for the year of opening for peak travel direction during the peak period.




***SR 167 northbound a.m. peak hour:***

- Total number of vehicles traveling through the SR 167 corridor - all three lanes - increases 12% with HOT lanes
- Total number of vehicles traveling in the HOT lane increases 20%

***SR 167 southbound p.m. peak hour:***

- Total number of vehicles traveling through the SR 167 corridor - all three lanes - increases 13% with HOT lanes
- Total number of vehicles traveling in the HOT lanes increases 56%

## How much faster will it be?

Despite the increase in the number of vehicles traveling through the corridor with HOT lanes, speeds in the general purpose lanes should stay the same or possibly increase up to 10 mph - *depending on location and time of day.* Speeds in the proposed HOT lanes should be comparable to the existing HOV lanes, with traffic volumes managed to maintain a minimum speed of 45 mph at least 90% of the time.

***Existing SR 167 facility with HOV lanes***

***Proposed SR 167 with HOV lanes converted to HOT lanes***